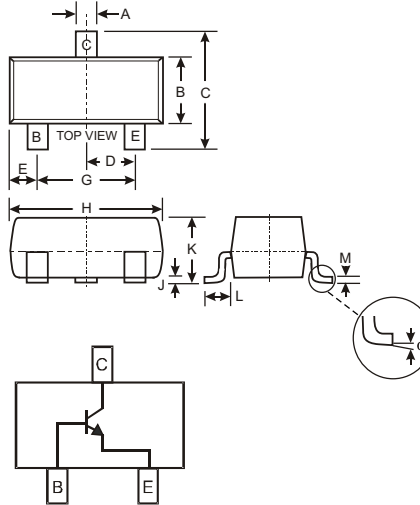


**Features**

- Epitaxial Planar Die Construction
- Complementary PNP Type Available (DP350T05)
- Ideal for Medium Power Amplification and Switching
- Lead Free By Design/RoHS Compliant (Note 2)**
- "Green" Device (Note 3)**
- Qualified to AEC-Q101 Standards for High Reliability**

**Mechanical Data**

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Finish Matte Tin Finish annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Marking (See Page 2): K3S
- Ordering & Date Code Information: See Page 2
- Weight: 0.008 grams (approximate)



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
	0	8
All Dimensions in mm		

**Maximum Ratings** @ T<sub>A</sub> = 25 C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CB0</sub>	350	V
Collector-Emitter Voltage	V <sub>CEO</sub>	350	V
Emitter-Base Voltage	V <sub>EB0</sub>	5.0	V
Continuous Collector Current	I <sub>C</sub>	500	mA
Power Dissipation (Note 1)	P <sub>d</sub>	300	mW
Thermal Resistance, Junction to Ambient (Note 1)	R <sub>JA</sub>	417	°C/W
Operating and Storage and Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	C

- Notes:
1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. No purposefully added lead.
  3. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).

## Electrical Characteristics @ T<sub>A</sub> = 25 C unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 4)</b>					
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	350		V	I <sub>C</sub> = 100 A, I <sub>E</sub> = 0
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	350		V	I <sub>C</sub> = 1.0mA, I <sub>B</sub> = 0
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	5.0		V	I <sub>E</sub> = 10 A, I <sub>C</sub> = 0
Collector Cutoff Current	I <sub>CBO</sub>		50	nA	V <sub>CB</sub> = 250V, I <sub>E</sub> = 0
Collector Cutoff Current	I <sub>EBO</sub>		50	nA	V <sub>CE</sub> = 5V, I <sub>C</sub> = 0
<b>ON CHARACTERISTICS (Note 4)</b>					
DC Current Gain	h <sub>FE</sub>	20 30 30 20 15	200 200		I <sub>C</sub> = 1.0mA, V <sub>CE</sub> = 10V I <sub>C</sub> = 10mA, V <sub>CE</sub> = 10V I <sub>C</sub> = 30mA, V <sub>CE</sub> = 10V I <sub>C</sub> = 50mA, V <sub>CE</sub> = 10V I <sub>C</sub> = 100mA, V <sub>CE</sub> = 10V
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>		0.30 0.35 0.50 1.0	V	I <sub>C</sub> = 10mA, I <sub>B</sub> = 1.0mA I <sub>C</sub> = 20mA, I <sub>B</sub> = 2.0mA I <sub>C</sub> = 30mA, I <sub>B</sub> = 3.0mA I <sub>C</sub> = 50mA, I <sub>B</sub> = 5.0mA
Base-Emitter Saturation Voltage	V <sub>BE(SAT)</sub>		0.75 0.80 0.90	V	I <sub>C</sub> = 10mA, I <sub>B</sub> = 1.0mA I <sub>C</sub> = 20mA, I <sub>B</sub> = 2.0mA I <sub>C</sub> = 30mA, I <sub>B</sub> = 3.0mA
Base-Emitter On Voltage	V <sub>BE(ON)</sub>		2.0	V	I <sub>C</sub> = 100mA, V <sub>CE</sub> = 10V
<b>SMALL SIGNAL CHARACTERISTICS</b>					
Output Capacitance	C <sub>obo</sub>		7.0	pF	V <sub>CB</sub> = 20V, f = 1.0MHz, I <sub>E</sub> = 0
Transition Frequency	f <sub>T</sub>	50		MHz	V <sub>CE</sub> = 10V, I <sub>C</sub> = 20mA

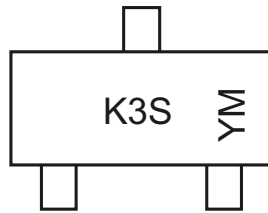
Note: 4. Short duration pulse test used to minimize self-heating effect.

## Ordering Information (Note 5)

Device	Packaging	Shipping
DN350T05-7	SOT-23	3000/Tape & Reel

Note: 5. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



K3S = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year ex: S = 2005  
 M = Month ex: 9 = September

Date Code Key

Year	2005	2006	2007	2008	2009	2010	2011	2012
Code	S	T	U	V	W	X	Y	Z

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

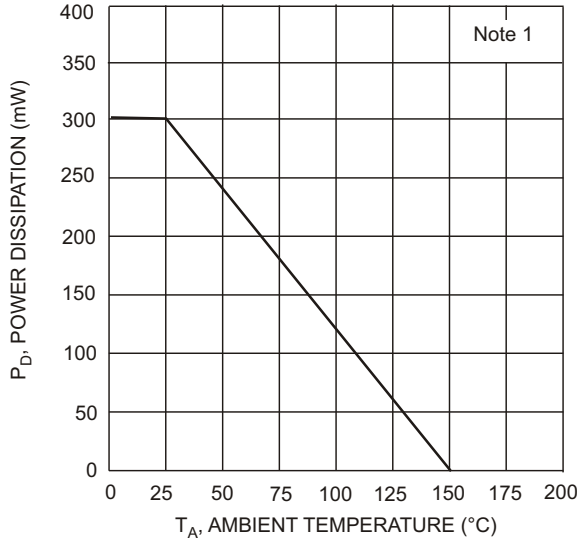


Fig. 1, Max Power Dissipation vs. Ambient Temperature

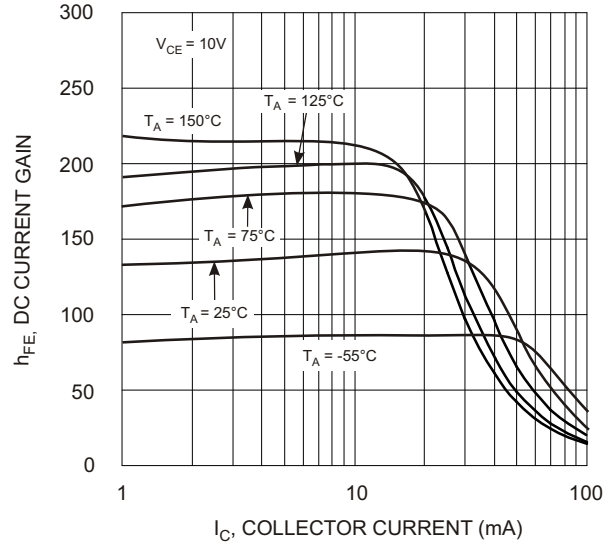


Fig. 2, DC Current Gain vs. Collector Current

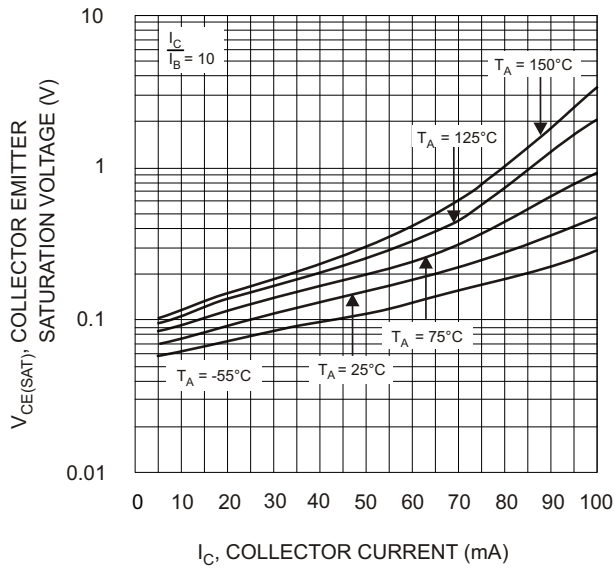


Fig. 3, Collector-Emitter Saturation Voltage vs. Collector Current

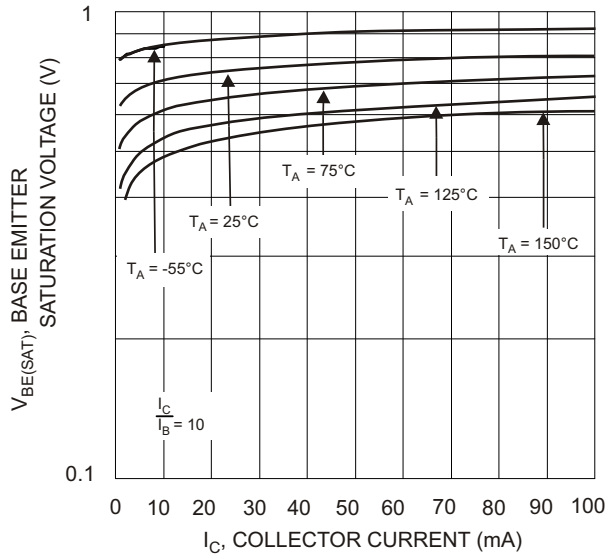


Fig. 4, Base-Emitter Saturation Voltage vs. Collector Current

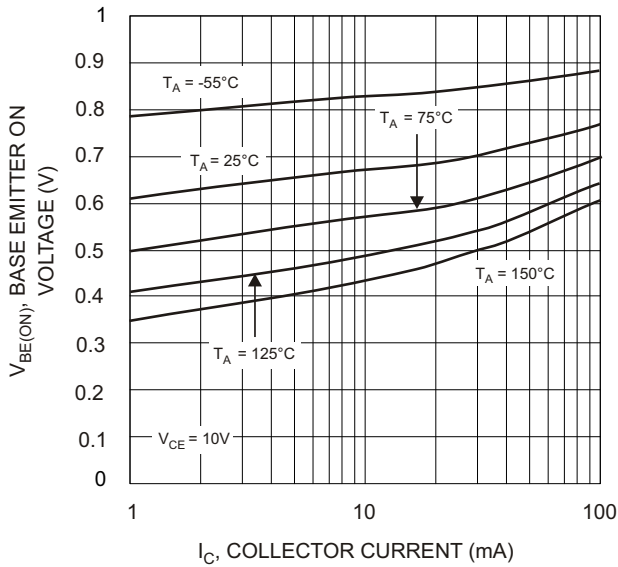


Fig. 5, Base-Emitter On Voltage vs. Collector Current

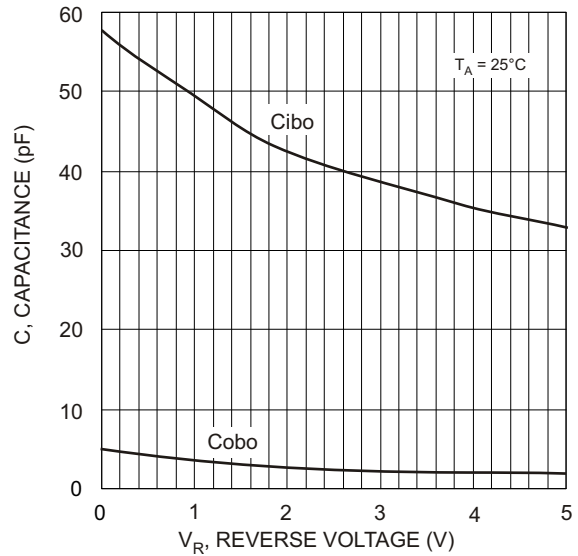


Fig. 6, Capacitance vs. Reverse Voltage

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